

ABSTRACT OF THE DISCLOSURE

The invention provides an optical switch using a two-dimensional photonic crystal capable of enabling higher integration, an optical communications device and an optical communications system. An optical switch of the present invention can include a substrate, a first slab layer and a second slab layer disposed over the substrate, a third slab layer provided over the substrate and placed between the first slab layer and the second slab layer, and a phase control area provided for the first slab layer and capable of controlling the phase of light passing through the slab layer. The slab layers can include a two-dimensional photonic crystal structure, a linear defect which functions as a waveguide, a point defect for emitting light and a point defect for trapping light. The point defect for trapping light in each of the first slab layer and the second slab layer and the point defect for emitting light in the third slab layer are positioned so as to face each other. Furthermore, the point defect for emitting light in each of the first slab layer and the second slab layer and the point defect for trapping light in the third slab layer are positioned so as to face each other.